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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/784,087	02/16/2001	Soon-Sung Yoo	8733.405.00	3235
30827	7590	10/10/2003	EXAMINER	
MCKENNA LONG & ALDRIDGE LLP			QI, ZHI QIANG	
1900 K STREET, NW			ART UNIT	
WASHINGTON, DC 20006			PAPER NUMBER	
			2871	

DATE MAILED: 10/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/784,087

Applicant(s)

YOO ET AL.

Examiner

Mike Qi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3-5, 21 and 22 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some    \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION *Claim Rejections* - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1-2 are rejected under 35 U.S.C. 102(e) as being anticipated by US 6,163,356 (Song et al).

Claim 1, Song discloses (col.7, line 66 – col.9, line 41; Figs.7-8) that a liquid crystal display device comprising:

- substrate (101);
- thin film transistor (TFT) including a gate electrode (111), a source electrode (121), and a drain electrode (131) on the substrate (101);
- pixel electrode (141) electrically connected to the drain electrode (131);
- data line (123) electrically connected with the source electrode (121);
- gate insulating layer (117) (first insulating layer), a pure amorphous silicon layer (133) and a doped amorphous silicon layer (135) sequentially layered under the data line (123);
- data pad (125) at one end of the data line (123);
- gate line (113) electrically connected with the gate electrode (111);

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- gate pad electrode (115) at one end of the gate line (113);
- the gate pad electrode (115), especially the portion of the gate pad (115b), is directly on the gate insulating layer (117), and the gate insulating layer (117) includes an opening (159) that exposes a portion of the gate line (113), and the gate pad electrode (115) electrically contacts the exposed portion of the gate line (113), especially the portion of the gate pad (115a, 115b) overlaps the gate insulating layer (117); the gate electrode (115) having a dummy gate pad (115b) serves as an etching protective layer with respect to the gate pad (115), and functions as this application using the gate pad (104); and the dummy gate pad (115b) functions as this application using the gate pad electrode (108), so that the gate pad (115b) also is a single layer on the top of the gate insulating layer (117).

Claim 2, Song discloses (col.9, lines 23-25) that the pixel electrode (141) is formed of transparent conductive material such as ITO (indium tin oxide).

***Allowable Subject Matter***

3. Claims 3-5 and 21-22 are allowed.
4. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither discloses nor teaches that a liquid crystal display device comprising various elements, more specifically, as the following:

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the drain electrode has a through hole that exposes a portion of the first insulating layer, and the pixel electrode electrically contact an inner side surface of the drain electrode via the through hole [claim 3; as shown in Fig.6D];

the data pad contact hole passing through the doped amorphous silicon layer and passing through the amorphous silicon layer, and the data pad electrode electrically contact an inner side surface of the data pad via the data pad contact hole [claim 4; as shown in Fig.6D];

claim 21 is dependent on the claim 3; claims 5 and 22 are dependent on the claim 4.

The closest references Applicant admitted prior art and US 6,163,356 (Song et al) discloses a structure of a liquid crystal display device comprising a drain contact hole, a source pad contact hole (data pad contact hole) and a gate pad contact hole, but the prior art of record do not disclose the drain contact hole and the data pad (source pad) contact hole passing through the silicon layer (the pure amorphous silicon layer and the doped amorphous silicon layer), wherein the portions of the gate insulating layer are exposed and the pixel electrode or the data pad electrode contact the inner side surface of the drain electrode or the inner side surface of the data pad via the through holes as claimed in the claims.

### ***Response to Arguments***

5. Applicant's arguments filed on Mar.27, 2003 have been fully considered but they are not persuasive.

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Applicant's **only** arguments are as follows:

1) The references do not disclose that a gate pad electrode is formed of a single layer directly on the top of a first insulating layer as claimed in claim 1.

Examiner's responses to Applicant's **only** arguments are as follows:

1) The reference Song discloses (col.7, line 66 – col.9, line 41; Figs.7-8) that the gate pad electrode (115), especially the portion of the gate pad (115b), is directly on the gate insulating layer (117); and the gate electrode (115) having a dummy gate pad (115b) serves as an etching protective layer with respect to the gate pad (115), and functions as this application using the gate pad (104); and the dummy gate pad (115b) functions as this application using the gate pad electrode (108), so that the gate pad (115b) also is a single layer on the top of the gate insulating layer (117).

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi  
September 15, 2003

  
TOANTON  
PRIMARY EXAMINER